David A. Giglio

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EDUCATION

NYU Tandon School of Engineering
Department of Electrical Engineering
PhD. Electrical Engineering, Power, Expected Fall 2019
Dissertation: High Frequency Synchronous Generators

NYU Polytechnic School of Engineering
Department of Electrical Engineering
M.S. Electrical Engineering, Power, May 2015
-Thesis description below

The City College of New York, CUNY
Department of Electrical Engineering
B.E. Electrical Engineering, Spring 2010
Minor in Physics (Optics and Photonics)
Senior Design Project: Refractive index optical modulation

Thesis

Title: "*Time Domain Simulation of the Hysteresis Main Loop of Power Transformers*".
Advisor: Francisco De Leon, Ph.D., Professor of Electrical Engineering, NYU
Skills and Methodology: A circuit model was developed and implemented in EMTP to simulate the hysteresis main loop. Two open circuit experiments were performed on two actual transformers, one of hard core material and the other of soft core material. The open circuit data from each experiment was used to determine the magnetizing curve of each transformer. Data points along the magnetizing curve were taken to approximate linear inductances which were used to calculate circuit model inductors. These circuit model inductors were control switched as a function of flux and were used to model the nonlinear inductance and magnetizing curves. A nonlinear resistance characteristic was determined from the experimental data and was implemented in the EMTP circuit model to simulate the main hysteresis curve.

CERTIFICATIONS/LICENSES

EIT (Engineering in Training), New York State   April 2013
Professional Engineering (PE) License: (Expected April 2019)

EXPERIENCE

Teaching Experience

STEMATIC WORKSHOPS, LLC
Summer 2018-Present
President
- Provide academic support to students pursuing STEM education and careers.
- Encourage individuals to pursue education and careers in STEM.
- Help individuals prepare and pass the High School Equivalency exam.
- Help individuals prepare and score high on the ASVAB military occupation exam.

NYU Tandon School of Engineering
Spring 2017
Teacher's Aide
- Instructed students to complete experiments in an energy conversion lab course.
- Administered and graded quizzes and exams.

Devry College of New York, Devry University
Spring 2012
Tutor
Tutored and prepared students for exams in the following courses:
- General physics, arithmetic, algebra, trigonometry, electrical circuit theory.

The City College of New York, CUNY
Spring 2008
Tutor
Tutored and prepared students for exams in the following courses:
- General physics, algebra, trigonometry, calculus, differential equations, electrical circuit theory, electromagnetics.

Research Experience

NYU Tandon School of Engineering, Power Lab
Fall 2018
PhD Graduate Student, Advanced Project 1
- Used COMSOL Multiphysics to model and simulate a 3-phase generator which uses 3-phase voltage excitation on the rotor coils to produce a rotating magnetic field to induce voltage on the stator windings
- Validated Ampere's Law and Faraday's Law under no load conditions
- Verified design parameters under no load conditions

Polytechnic Institute of NYU, Power Lab
Spring 2015
Master's Thesis
- Used Electromagnetic Transients Program (EMTP) to model and simulate Hysteresis in transformer iron cores
- Applied Farday's Law to model induction using flux controlled switches
- Presented my research results to the ECE department in my Thesis defense.

City College of New York, Semiconductor Lab
The Louis Stokes Alliance of Minority Participation
Fall 2009 - Spring 2010
Undergraduate Researcher
- Assisted in constructing experimental setups consisting of lenses, lasers, photo sensors, a light source, and beam choppers.
- Performed experiments to study and measure optical properties of semiconductor wafer prototypes and recorded experimental data.
- Used High Frequency Structure Simulator (HFSS) to model the semiconductor prototypes used in the experiments.

Professional Design Experience

E-J Electric Installation Co., Long Island City, New York 11101
December 2017- Present
Project Engineer - EIT
- Use **Autocad** and **Revit** to produce power, lighting, and fire alarm system design drawings for various building types.
- Proficiently read and interpreted design schematics, drawings, and line diagrams to coordinate with all trades.
- Ensure electrical power system designs and installations complied with the **NEC** code and NYC amendments. Perform calculations to size cables and electrical equipment to be installed; circuit power and lighting loads.
- Use **Procore** to review and respond to submittals, shop drawings, and as built drawings.

NYU Tandon School of Engineering, Power Lab
September 2016 - June 2017
Teacher's Assistant
- Set up transformers for open circuit, short circuit and load tests to determine circuit model parameters.
- Prepared testing for ACAC converter (VFD) control of an induction motor under various load conditions.
- Used **COMSOL** to create and simulate a 3-D model of a 1KVA, 120V, 1:1, toroidal transformer and reported results.

WSP | Parsons Brinckerhoff, Electrical Engineering Department
September 2014 - July 2016
Electrical Design Engineer

- Perform calculations to determine sizes and ratings for power cables, electrical panels, power transformers, and switch boards in designing power systems.
- Use Autocad and Revit to circuit power and lighting loads and produce power system infrastructure design drawings for all types of buildings.
- Apply Comcheck to ensure lighting systems meet energy density building codes.
- Survey field conditions, inspect electrical installation work, and report on progress.
- Ensure electrical power systems comply with the NEC and NYC amendments.

Long Island Rail Road, MTA, Bethpage, New York 11714
December 2013 - July 2014
Junior Engineer - Power, IE/EIT, Power Department

- Substations: Assisted in installation and maintenance of railroad substations for power rectification, power switching and protection for electric traction.
- Developed basic understanding of SCADA and PLC substation control. Electric Light & Power: Assisted in management of installation and maintenance of main distribution panels, emergency distribution panels, automatic transfer switches, generators/motors, lighting circuits, various power loads.

WASA STUDIO/A, Electrical Engineering Department
May 2013 - August 2013
Electrical Engineer

- Applied the NEC, NFPA, and NYC building code in designing power, lighting, and fire protection systems.
- Used Revit to implement BIM design, and used Autocad to design electrical layouts, one line diagrams and schematics.

Technical Experience

De Falco Electrical Contracting
August 2011-January 2012
Electrician

- Installed residential/commercial power systems: single-phase (120V/240V), and three-phase (120V/208V, 277V/480V)
- Troubleshot and installed lighting systems controlled by single-pole, three-way, and four-ways switches.
- Bent/installed electrical conduit, installed electrical pull boxes, and pulled wire/cable.

PROFESSIONAL AFFILIATIONS

Institute of Electrical and Electronics Engineers (IEEE)
Society of Hispanic Professional Engineers (SHPE)

LANGUAGES

Fluent in English (primary), proficient in Spanish, and conversant in Italian.

REFERENCES

Credential file forwarded upon request.